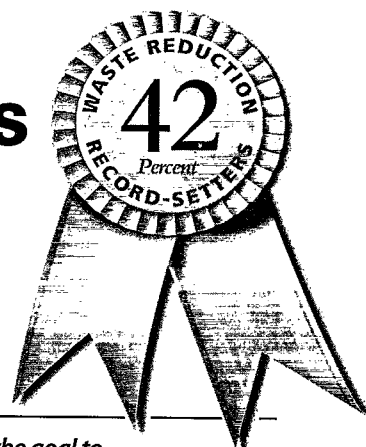




Whole Foods Market Corporate Headquarters Building

Austin, Texas

42% Reduction of Renovation Materials



When Whole Foods renovated its corporate headquarters in fall 1998, with the goal to create a "green" commercial building, it required all contractors to reduce, reuse, or recycle their waste. Contractors recovered 42% of the project waste while saving Whole Foods over \$2 per square foot. Whole Foods reached this reduction level despite being located in a city that has few established markets for recyclables and four landfills that keep disposal rates low.

Project Description

Whole Foods expanded its corporate headquarters by renovating 4,000 square feet on the third floor of its existing building and over 11,500 square feet on the third floor of an adjacent building. The renovation involved removing all existing materials except for the frame and exterior wall. In order to create a seamless transition between the two buildings, the contractor had to lower one part of the floor and raise the roof of the adjacent building. Whole Foods began planning for the expansion in January 1998 with an overall goal to create a "green" commercial structure within reasonable cost and available technology. To meet this goal,

Whole Foods allowed a 10 percent price preference for sustainable building techniques and materials, and the project manager required all contractors to reduce, reuse, and recycle, C&D debris.

The project manager, who was also the sustainability consultant, included a section in the project contract on materials management. This section specified acceptable procedures for reusing and recycling renovation materials. The project manager also required contractors to complete a *Summary of Waste*

Generated and Recycled for the Project form. To enforce the provisions in the contract, Whole Foods did not process payments unless the general contractor submitted this form. As an incentive for crew members, the contract allowed for a portion of materials sales revenue to fund refreshments for them.

The general contractor was in charge of all materials management, including recycling structural steel and other metals, and salvaging other building materials. The builder used many salvaged materials in the renovation and donated other reusable materials to various organizations, such as Habitat for Humanity. Overall, project participants diverted 42% of materials generated during the renovation from disposal.

Because the renovation took place on the

Materials Collected

Recycled

structural steel, miscellaneous metals (metal studs, ceiling grid and support wire, conduit, strapping from lumber and deliveries, tubing, piping, and rebar), and cardboard

Reused On-site

mop sink, fire-rated ceiling tiles, light fixtures, HVAC devices, and fire-rated doors and hardware sets

Donated

carpeting, spotlights and track lights, wooden doors, plywood, medium density fiberboard (MDF), soundboard, accordion-folding wall, ceramic floor tile, ceiling fans, cabinets, mirrors, and structural wood and flooring

third floor, staff had to load all materials into a freight elevator and transport it through the loading dock. The loading dock had only enough space for one 30-cubic-yard roll-off at a time and, therefore, staff had to rotate roll-offs for disposal and recycling. Staff had to store materials on the job site until they could be placed into the appropriate roll-off.

Costs/Benefits

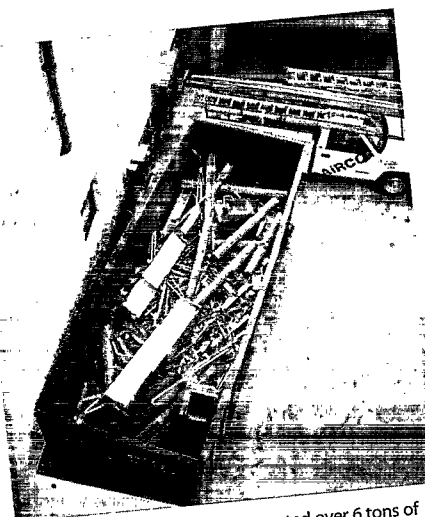
The Whole Foods Market Corporate Headquarters Expansion Project has not only served as a prototype for "green" commercial building in Austin, but was also cost-effective. By recycling and reusing materials, Whole Foods saved over \$32,000. Even though the company was willing to pay more for using sustainable building techniques, it actually paid less. Reusing materials, such as fire-rated ceiling tile, light fixtures, and HVAC diffusers, saved almost \$25,000 in new

materials purchases. Avoided disposal saved the project almost \$1,200, while revenue from materials recovery totaled over \$200. Labor costs for the project totalled almost \$83,000 and included costs for the general contractor (6,000 hours), costs for general cleanup (930 hours), and all subcontracted labor. Due to careful planning and the relatively small site area, labor costs for moving materials for reuse to and from on-site storage locations were only \$209. Materials diversion did not appear to increase fees subcontractors charged for labor. Materials diversion required additional design, planning, and consulting, which cost approximately \$1,400 more than if the project had no materials diversion. Overall, these increased costs were offset by lower costs for waste hauling, disposal, materials purchases, and revenue from materials sales.

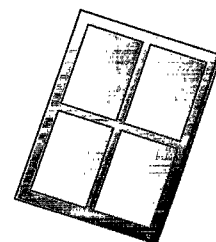
Tips for Replication

- Communicate your needs in the specifications and at pre-bid and pre-construction meetings to all players, including the job foreman, materials salesmen, and the project superintendent.
- Involve the general contractor early in the design process.
- Use job-site safety meetings to communicate waste reduction goals.
- Do not over-complicate waste handling guidelines.
- Carefully coordinate reuse of smaller materials such as door hardware.
- Create recycling and waste reduction incentives for the construction crew such as pizza parties and doughnuts for breaks.
- If space is limited, use a separate storage facility for reusable items to avoid unnecessary moving of materials.

Source: Shellie Reott, Earthly Ideas



Contractors sorted over 6 tons of metal into roll-offs for recycling.



Project Summary

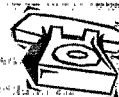
Date Started	January 1998
Date Completed	October 1998
Project Square Footage	15,500
Total Waste Generated (Tons)	55.0
Disposed (Tons)	31.8
Total Materials Diverted (Tons)	23.2
Recycled	9.3
Reused	5.4
Donated	8.5
Total Materials Diverted	42%
Hauling and Disposal Tip Fees (\$/ton)	
Landfill	\$51.42
Materials Diversion Costs	
Planning and Development	\$1,400
Labor	\$209
Hauling and Tip Fees	\$0
Revenue/Savings from Materials Diversion	
Revenue from Materials Sales	\$226
Savings from Materials Reuse	\$24,675
Savings from Avoided Disposal	\$1,193
Tax Deductions from Donations	\$8,335
Cost/(Savings) from Diversion	(\$32,820)
Cost/(Savings) per Square Foot	(\$2.10)

Notes: Figures may not add to total due to rounding. Shellie Reott calculated savings from materials reuse using avoided purchase price of new materials. Savings from avoided disposal resulted from avoided hauls and disposal of 117 cubic yards of materials.

Source: Institute for Local Self-Reliance and Shellie Reott, Earthly Ideas; 1999

Client

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